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ABSTRACT

The topic of this lecture is building a base of support for research and development in agriculture. First discussed is some of the history of agriculture education in America, including (1) the Morrill Act, which gave public lands to states for agricultural colleges; (2) the Hatch Act, the purpose of which was to promote investigation, experiment, and dissemination of information on agricultural science, and (3) the Smith-Lever Act, which legislated matching funds for extension work to offer practical demonstrations, publications, and other instruction to the public. For approximately the past 100 years the building of a constituency for research and development in agriculture has progressed very slowly. Few students took agricultural courses at first, even when the American economy was largely rural. To build a constituency, research in agriculture must produce something of value to potential constituents, and the results of research must be communicated to them. Discussed are various methods of disseminating information, including publication or research findings, and participation in meetings of commodity organizations. Questions from the audience concern specific accomplishments of research and development in agriculture, ways in which the quality of life of Ohio farmers has improved, and priority-setting. (CD)

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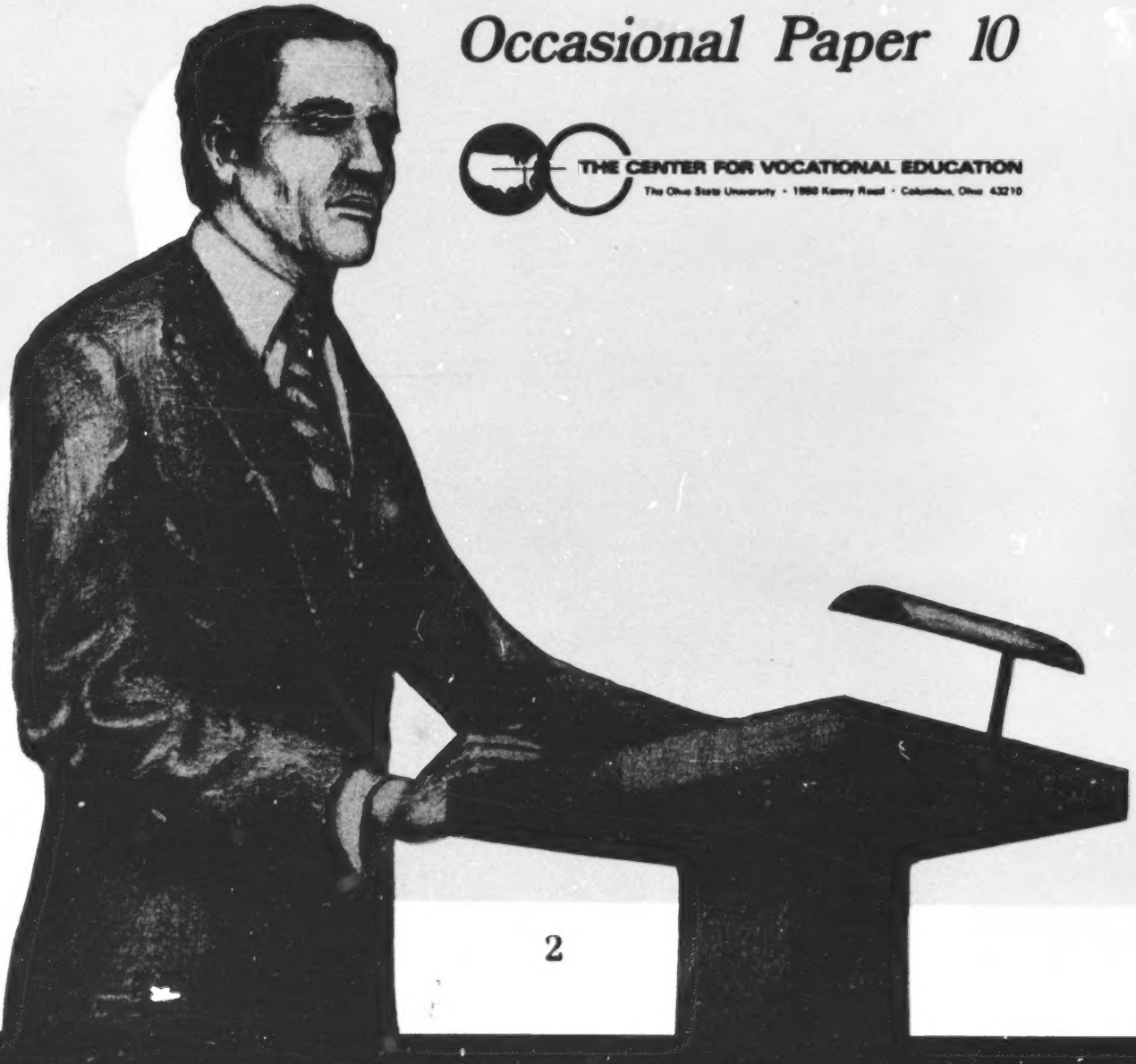
Building A Constituency For Research And Development

Roy M. Kottman

Occasional Paper 10



THE CENTER FOR VOCATIONAL EDUCATION
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- Installing educational programs and products
- Operating information systems and services
- Conducting leadership development and training programs

Occasional Paper No. 10

BUILDING A CONSTITUENCY FOR RESEARCH AND DEVELOPMENT

by

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Director, Ohio Cooperative Extension Service

The Center for Vocational Education
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1960 Kenny Road
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PREFACE

Dr. Roy M. Kottman, dean of the College of Agriculture and Home Economics, The Ohio State University, recently presented a stimulating lecture on Constituency Building for Research and Development. Since the "Agricultural Model" of Research, Development & Extension is frequently cited as one of the most successful research traditions, dean Kottman is uniquely qualified to address such a topic because of his rich experiences in managing and directing research, development, and extension programs in agriculture.

In his lecture, Dr. Kottman deals initially with the need for capacity building in research and development to deliver on present objectives and societal needs. Current federal policy neither prescribes nor provides for capacity building in educational research and development. Dr. Kottman explains how this important phenomena has been developed and maintained in agriculture and parallels this effort with what could be accomplished in other fields which impact on the public welfare.

Dr. Kottman was appointed dean of the College of Agriculture and Home Economics at The Ohio State University, and director of the Ohio Agricultural Research and Development Center (formerly Ohio Agricultural Experiment Station) on June 1, 1960. He was named director of the Ohio Cooperative Extension Service on July 1, 1964. In addition to these three administrative posts, he holds the rank of professor of animal science.

Dean Kottman serves as a member of the University's Council of Deans, the Board of Directors of the Development Fund of The Ohio State University, and as a member of the State Soil and Water Conservation Commission.

Dr. Kottman holds a bachelor of science degree in animal science from Iowa State University; a master of science degree in genetics from the University of Wisconsin, and a Ph.D. degree in animal breeding from Iowa State University. He served as associate dean of agriculture at Iowa State from 1954 to 1958 and as dean of the College of Agriculture, Forestry and Home Economics at West Virginia University and director of the West Virginia Agricultural Experiment Station from 1958 to 1960.

Born and raised in Iowa, Dr. Kottman served as an honor cadet in the Iowa State University ROTC Corps and upon graduation was commissioned a Second Lieutenant in the Artillery. He served on active duty from 1941 to 1947 and remained on active reserve duty status until 1961 when he retired from military service as a Colonel.

While Dean Kottman's basic field is animal science, specifically genetics and breeding, his interests and activities encompass all aspects of education in agriculture, natural resources and home economics, as well as research and administration in those areas.

In August 1974, Dean Kottman served as co-host for a People-to-People Good Will Delegation to Europe and the Soviet Union. Currently he is serving as national chairman of the Legislative Subcommittee of the Experiment Station Committee on Organization and Policy, Division of Agriculture, National Association of State Universities and Land-Grant Colleges. He is also chairman of the Nominating Committee of the Agricultural Research Institute, and a member of the National Advisory Council for Scabbard and Blade.

Dr. Kottman is a member of the American Association for the Advancement of Science, the American Society of Animal Science, and of the honorary societies, Sigma Xi and Phi Kappa Phi. He is a member of Gamma Sigma Delta and Alpha Zeta, agricultural honoraries. Dean Kottman serves on the Board of Trustees of the Farm Film Foundation and is a member of the National Dairy Shrine Club, Ohio Agricultural Council, Executive Order of the Ohio Commodores and Pi Kappa Phi fraternity. He is an honorary member of the Rotary Club of Wooster (Ohio), and the fraternities of Alpha Gamma Rho, Delta Theta Sigma, and the Society of Phi Zeta.

In 1972 he received an honorary L.L.D. from The College of Wooster (Ohio). In 1973, he received the National Limestone Institute's Distinguished Service Award for dedicated leadership and service to the development and progress of the nation's agriculture. In 1974 he was presented the Soil Conservation Society of America's Honor Award.

Dean Kottman is currently listed in "Who's Who in America," "Leaders in American Science," "American Men of Science," "Who's Who in Higher Education," "Leaders in Education," and "Community Leaders of America."

On behalf of The Ohio State University and The Center for Vocational Education, we take pleasure in sharing with you Dr. Kottman's presentation, "Building a Constituency for Research and Development."

Robert E. Taylor
Director
The Center for Vocational Education

BUILDING A CONSTITUENCY FOR RESEARCH AND DEVELOPMENT

I appreciate the opportunity to participate in this staff seminar sponsored by The Center for Vocational Education. I sincerely hope that some of our experiences in agriculture, home economics, and natural resources will prove helpful to those of you who are working in other disciplines. On the other hand, I am sure that neither you nor I believe that what has happened or what is now happening in agriculture by way of constituency building can be transferred automatically or easily to other disciplines and other constituencies. There are parallel situations, however, in our admittedly diverse fields of endeavor and if my experiences and my understanding of what seems to have been successful for agriculture suggest items of transferability to your areas of endeavor, then I shall be well rewarded for having agreed to participate in this program.

It is important, perhaps, that we review a bit of history. I hope to convey to you important elements in the history of the so-called Land-Grant System, with special emphasis on the research member of the Land-Grant trio of research, resident instruction, and extension.

MORRILL ACT

> Each state which may take and claim the benefit of this Act to the endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts in such manner as the legislature of the states may respectfully prescribe in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life. July 2, 1862

As most of you are well aware, it was in response to the Morrill Act of 1862, that The Ohio State University was established as the Ohio Agricultural and Mechanical College in March 1870. During the interim between 1862 and 1870, the Ohio General Assembly wrestled with the pros and cons of accepting the provisions of that Act. In the first place, the educational institutions prescribed in the legislation were not only new in concept but very different in scope of responsibilities. Since their primary mission was to provide education in agriculture and the mechanic arts, they represented a break with the classical institutions of that time which were involved almost exclusively with the preparation of teachers, preachers, lawyers, and doctors.

Although we trace the beginning of The Ohio State University from March 22, 1870 when the Ohio General Assembly passed "an act to establish and maintain an Agricultural and Mechanical College in accordance with the provisions of an act of Congress, passed July 2, 1862," the new institution did not open its doors to students until September 17, 1873.

It is interesting to note that a physician, Dr. Norton S. Townshend, was actually among the compelling influences in Washington, D.C., which led the Congress to enact the Morrill Act of 1862. It was this same Dr. Townshend, for whom Townshend Hall on our campus was named. His interest in agricultural education, predated by many years the establishment of the Ohio Agricultural and Mechanical College. He and some of his colleagues attempted to establish an agricultural institute at Oberlin College in 1854, and later they tried to establish one at Cleveland; both, however, failed for lack of students, a type of failure which many institutions are finding to be as serious to the operation of a college or university in 1975, as it was more than 100 years ago.

I have always been intrigued by the fact that the Morrill Act of July 2, 1862 provided for "donating public lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts." The land provided by the federal government to Ohio as a nest egg for starting its new land-grant college was located in Wisconsin. It was a sizable piece of land; some 630,000 acres which the law said could be sold at a "price not less than 80¢ an acre." As it turned out, only 12,800 acres were sold at the 80¢ figure and when it was all sold the average price received for it was 54¢ an acre which means that our permanent endowment for The Ohio State University from the sale of public land as provided for in the original Morrill Act netted the state of Ohio and The Ohio State University the grand total of $340,200. That "nest egg" was placed in the state treasury as part of the so-called "irreducible debt of the state" and has since that time provided interest at the rate of 6 percent a year to assist all of us in our work here at The Ohio State University.

I have always been greatly interested in the fact that Dr. Norton S. Townshend, a physician, resigned from the Board of Trustees of the new institution in order to accept the position of "Professor of Agriculture" in one of the eight departments of the new institution which finally opened its doors to students on September 17, 1873. Dr. Townshend was assigned to teach every subject offered in agriculture: horticulture, botany, and veterinary medicine. At the same time he was named farm superintendent and was expected to conduct experiments on crops and soils. One historian has characterized that assignment as being "a super-human assignment." It is apparent that working more than forty hours per week is not a phenomenon of recent origin!

As is usually true of anything new (and, in the precise words of historians), the farmers of Ohio, as did farmers in other states, received the new college "coolly."

It was not until 1881, that the fledgling University's Department of Agriculture became the School of Agriculture and Dr. Townshend got some relief from his multiple assignments in the person of William R. Lazenby, who came to Ohio State as a teaching assistant. In that same year, a new Department of Botany and Horticulture was established and Professor Lazenby was placed in charge of that new department.

Also, in 1881, Dr. Townshend was instrumental in having introduced in the Ohio General Assembly a measure to establish an Agricultural Experiment Station with its own separate Board of Control. The University Board of Trustees opposed the establishment of the Agricultural Experiment Station but it was established nonetheless and Professor Lazenby had some new duties added to his chairmanship of botany and horticulture, inasmuch as he was also named director of the Agricultural Experiment Station. He was later relieved of that responsibility by Dr. Townshend who in turn employed Charles E. Throne as full-time director of the Experiment Station.

HATCH ACT

> To aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture and to promote scientific investigation and experiment, respectively, in the principles and applications of agricultural science. 1887

It was only after passage of the Hatch Act in 1887, (which provided the magnificent sum of $15,000 in federal funds to each state for operation of an Agricultural Experiment Station) that Dr. Lazenby was replaced by a full-time director of the Experiment Station in the person of Dr. Charles E. Thorne.

I have always been interested in the fact that in all the years from September 1873 to June 1890 only five students were graduated from the curriculum in agriculture at Ohio State. Agriculture majors constituted only five out of a total of 201 students who were graduated during that seventeen year period. Quite obviously, collegiate study of agriculture was not an "in" thing.

A third faculty member, Dr. Henry A. Weber, was added to the agriculture faculty in 1884. He was appointed professor of Agriculture and Chemistry. His was a joint appointment because he received part of his pay from the Ohio Agricultural Experiment Station and part from The Ohio State University.

As of 1884, there were almost as many professors as there were students. Historians tell us that there were only six students enrolled in agriculture, nine in veterinary science, and four in horticulture following eleven years of effort to build a school for the farmers of the state. I find the contrast almost unbelievable when I think about our new Agricultural Technical Institute at Wooster where in the third year of operation we have moved from zero students in 1973 to 482 students in 1975. It appears that during the past nearly 100 years some of the folks in agriculture must have done something right! The Agricultural College that essentially was ignored by a population which was comprised of 60-70 percent farmers is now warmly espoused by a population comprised of only 4 percent farmers. It is perhaps not immodest to suggest that a considerable amount of constituency building has taken place throughout the past century. Incidently, the name of the Ohio Agricultural and Mechanical College was changed by an act of the Ohio General Assembly in 1878, to The Ohio State University. At the same time, the state Board of Agriculture with its twenty-one members which had served as the governing board for the institution, was replaced by a Board of Trustees with only seven members. This change, when viewed in perspective, appears to have been the right one, but at the time it could hardly be viewed as a positive step toward building a constituency for the struggling new institution. As a matter of record, rural opposition to the university developed rapidly as a result of this action by the General Assembly. Operation of the college farm, which was inadequately equipped, and operation of the Experiment Station which was inadequately staffed and inadequately funded, became sore points with the new Board of Trustees. A young Greene County farmer was promptly employed to manage the university farm. This young man was Charles E. Thorne, who did such a fine job in financial management as well as in experimentation with crops and livestock, that Dr. Townshend named him director of the Experiment Station. As I have indicated previously, this was done in 1887 when the Hatch Act first provided $15,000 which was thought to be sufficient funding to justify a full-time director.

It is interesting to me to note the progression of our college from its establishment as a Department of Agriculture in 1873, to a School of Agriculture in 1882, to a College of Agriculture in 1896, and to a College of Agriculture and Domestic Economy in 1897, when Home Economics joined the newly designated College as a Department of Domestic Economy. The name of the college was changed back to College of Agriculture in 1911. The Department of Domestic Economy was renamed Home Economics in 1913, but it was not until 1929 that it became a School of Home Economics. Finally, in 1958, the name of the college was changed to "College of Agriculture and Home Economics." Presently we are working to change the name of our college to the College of Agriculture, Home Economics and Natural Resources, so as to reflect incorporation of the new School of Natural Resources which became a major administrative unit of our college as of July 1, 1968. This new school was an outgrowth of the Institute of Natural Resources which was established at Ohio State in 1950.

So much for history! I have included discussion of it to emphasize the fact that constituencies are not built overnight. "Instant" constituencies may be a possibility by way of political redistricting, but in terms of educational and research institutions, the building of constituencies requires a great deal of time, energy, and effort.

SMITH-LEVER ACT

> . . . Cooperative agricultural extension work shall consist of the giving of instruction and practical demonstrations in agriculture and home economics and subjects relating thereto . . . and imparting information on said subjects through demonstrations, publications, and otherwise . . . 1914

I am reasonably confident that our task of building constituencies for Agriculture, Home Economics and Natural Resources would have been very much more difficult had it not been for establishment of the Department of Extension within our college as of 1905, with Mr. A. B. Graham (who is generally credited with being the founder of 4-H Club work in the United States) as superintendent of Extension. Mr. Graham served in that capacity until 1914 when the Smith-Lever Act was passed by the Congress and provided federal matching funds for carrying information and education to all citizens.

Simply stated, what we in agriculture have attempted to do throughout the years in terms of building a constituency for research and development can be summarized as "doing a good job on a day-to-day basis and then making sure that the new knowledge generated by our research and development efforts got communicated to the people who could use it." The Ohio Cooperative Extension Service has been and continues to be a vital link in building our constituency. In a number of the developing countries of the world, I have seen good research accomplished in really first-rate laboratories but I have often lamented the fact that frightfully little of that research information was being used by the citizens of those countries simply because there was no Extension Service to disseminate the new knowledge, and no "field" demonstrations to show people how to utilize new knowledge in improving their economic situation or their homes and communities.

In my opinion, there is no way that we can build a constituency unless we produce something that is of interest to our potential constituency and unless our product is sufficiently worthwhile to our constituency for them to exert themselves on our behalf.

Some of the ways that we communicate the results of our research to the citizens of Ohio are to be found among the following examples:

1. Farm Science Review.

2. Field Day Programs jointly sponsored by Research and Extension.

3. Participation in the programs of commodity organizations and associations.

4. Dissemination of research accomplishments to the public through a popular publication which we call "Ohio Report."

5. Regular news releases to dailies and weeklies as well as to radio and television stations.

6. Maintaining an open-door policy with respect to visitors at every one of our 110 office locations throughout Ohio.

7. Attendance at local, state, and regional meetings of commodity organizations.

8. Acceptance of speaking engagements at service clubs, at annual meetings of various farm organizations, and before practically any group that will invite us to speak and present the results of our research.

9. Staging campus-wide open house at five-ten year intervals.

10. Exhibits at state and county fairs and at trade shows.

11. Tours, demonstrations, field days, and other types of meetings at each of the ten research branches located throughout the state, plus day to day contact with extension specialists.

12. Inviting legislators (both state and federal) as well as county commissioners to participate in special days at the OARDC main campus or at the branches.

13. Working with commodity groups in their staging of special days such as the "50 x 75" program for increased soybean production.

14. Long-range studies and publication of them.

15. Use of alumni-industry advisory committees.

16. Cooperation with any and every group which requests our help.

17. Working twelve to sixteen hours every day and banning the word "NO" from our vocabulary.

18. Various others.

It is only when people believe that you have something worthwhile to offer and that you are generally interested in sharing your information and expertise with them that they will respond in meaningful ways.

We believe that our constituency for the College of Agriculture, Home Economics and Natural Resources comprises not only our students, our faculty and our alumni, but literally comprises every man, woman, and child in the state of Ohio. We believe there is nothing more important than the home and family adequately nurtured by the food and fiber whose production is made possible by wise management of our natural resources. Our college is at the very center of life and living! To the extent that each and every Ohio citizen does not now consider himself or herself as one of our constituents, we have not yet achieved the level of acceptance and support that we must achieve.

I sincerely hope that this presentation will be suggestive of means and mechanicsms which each of you can utilize in building a constituency for research and development in your respective fields of endeavor.

QUESTIONS/RESPONSES

1. QUESTION

Due to the immaturity of the R & D field in education, the lack of legislation that puts into place the several elements of "systems" and educators' performance within the R & D community, we are constantly being asked to justify our existence which is not unreasonable in public life. They are asking for what you can call "impact data" such as (1) How many students are using your products and materials? (2) What is the relative advantage of change in their behavior or their learning? and (3) How economical is that intervention in terms of what it displaces, etc.? Do you aggregate comparable data on the impact of some of the agricultural research and development projects?

ANSWER

We are in a fortunate position to evaluate the impact of our agricultural research and development projects. We know, for example, that the Logan wheat variety which we developed and released in 1970 yields an average of seven bushels to the acre more than previously grown varieties of soft red winter wheat. This new variety is now grown on approximately 130,000 acres in Ohio. That means a million additional bushels are now being produced each year because of the increased production of that one new variety. At $5.00 per bushel, that is $5 million annually.

Just last year we released what we believe is the best wheat variety we have ever released. It will take two years to get the seed increased to the point that this new variety will be generally available to Ohio growers. This new variety, which we have called "Ruler," yielded up to 92 bushels per acre in comparison with 42 bushels per acre which is the average of the wheat varieties commonly grown in Ohio. This new variety will make it possible for Ohio farmers to produce at least 10 million bushels more wheat each year and at $5.00 per bushel, we are talking about $50 million more income to Ohio farmers and to Ohio's economy once this new seed variety gets into widespread production in Ohio.

2. QUESTION

I went on the Rapid Adjustment Farm Tour and I was impressed with the things that were happening. I can readily see the manner in which you aggregate the economic advantages of R & D, but I also couldn't help but be aware that there were tremendous changes occurring with regard to the quality of life with those farm families. Many things were happening from the home economics side that did not readily translate themselves into gross income. How are you able to aggregate, document, or demonstrate that?

ANSWER

We attempt to document changes in the quality of life for farm families through pictures of their homes before and after we begin working with them. We also show the appearance of their home grounds, i.e., flowers, ornamentals, and other types of plantings which indicate a new level of appreciation and understanding of the quality of life. In some instances we are able to document personal progress by way of elective offices held. In the case of one of our Rapid Adjustment farmers in Adams County (a very bashful individual who could hardly speak his name when we started working with him), we found that he had become sufficiently self-confident to offer testimony at an EPA hearing at Indianapolis following five years of experience on our Rapid Adjustment Farm Program. The bank balance, the farm account books being kept, and the family participation in various community activities, organizations, and projects provide additional examples of the changes in the quality of life of the farm families with whom we work. The willingness of lenders to loan money to farm families is another reasonably good indication.

3. QUESTION

Do you keep records concerning the activities of your staff?

ANSWER

Yes, we do keep records on the work of each one of our Extension Service employees. The hours as well as numbers of individuals involved in each day's work are maintained as a part of our computerized "State Extension Management Information System (SEMIS)."

4. QUESTION

What is the usual process by which to establish research priorities?

ANSWER

Departmental review, followed by a review conducted by an Assistant Director who is responsible for liaison with certain Departments, and finally, by the office of the Associate Director and the Director. Peer review takes place in the Department with additional review outside of the Department taking place when the Assistant Director circulates projects to closely related Departments for review and comment.

5. QUESTION

What are the basic criteria utilized for evaluating competing projects and making priority determinations?

ANSWER

(1) Quality of the proposal in terms of concepts and procedures on how best to undertake a given piece of research.

(2) Adequacy of the literature review.

(3) Relative need for the anticipated results in terms of questions being asked by the industry involved.

(4) The "track record" of the person or persons submitting the proposal in terms of their background and experience for undertaking the research and in terms of likelihood of useful information being derived if the research is carried out.

(5) Severity of the economic problems which prevail or may prevail if the research is not undertaken.

6. QUESTION

What is the relative balance of investments? What portion year-in and year-out tends to support sustained inquiry that provides the knowledge base that you have to work from when you're confronted with a crisis? What percentage of the funds are invested in responding to epidemics?

ANSWER

About 25 percent of our research at the Ohio Agricultural Research and Development Center is "basic" research which provides the knowledge base which will be needed when we are confronted with new problems or crises. About 10 percent of our research dollars are utilized in responding to disease, insect, or other epidemics or emergencies such as the polychlorinated biphenol silo coatings (PCB's) which contaminate milk and deny a market to those farmers whose milk is so contaminated. The remaining two-thirds of our research is devoted to problem- and commodity-oriented effort which leads to higher yields, constantly improved quality, more efficient marketing, etc.

7. QUESTION

Guidance programs for high schools—How do we prove to Congressmen and others that a school guidance program could assist in resolving a major societal problem?

ANSWER

Through evaluation—this is where all of us are weak. More time needs to be spent on the evaluation phase.

8. QUESTION

There is a potential for curriculum overlap in states—many of the priorities would be the same. What kind of mechanism do you have for coordinating your priorities with other states?

ANSWER

(1) For our research in Agriculture, Home Economics, and Natural Resources, we utilize a computerized information system called "CRIS—Current Research Information System." Every project of the State Agricultural Experiment Stations, the Cooperative Forestry Research Institutions, the Colleges of 1890 and Tuskegee, plus the USDA agencies—Agricultural Research Service, Forest Service, Economic Research Service—is fed into this computer system maintained by the Cooperative State Research Service of the USDA. Printouts are available to scientists throughout that entire complex of research agencies and organizations.

(2) We utilize a national planning system monitored by ARPAC—Agricultural Research Planning Advisory Committee—which is co-chaired by the Assistant Secretary of Agriculture for Science and Education and by a Dean or Vice President of Agriculture at one of the Land-Grant institutions. Working directly under this advisory committee is the National Planning Committee which encompasses membership from the State Research Organizations as well as USDA agencies and agricultural-industry research laboratories. A similar Regional Planning Committee operates under the National Planning Committee in each of the four regions—North Central, Northeast, Southern and Western.

9. QUESTION

How do you get industrial people involved in this system? How long has this been going on?

ANSWER

Each of the Regional Planning Committees, as well as the National Planning Committee, includes representatives from industrial research laboratories. Those representatives are appointed to the National and Regional Research Planning Committees by the President of the Agricultural Research Institute. This type of involvement with industry has been developed primarily since 1966. Prior to 1966 the coordination of agricultural research between publicly-supported laboratories and industrially-supported laboratories was achieved through approximately 150 Regional Research Technical Committees. The work of these Regional Technical Committees is carefully scrutinized by the Cooperative State Research Service and by the Committee of Nine (a statutory committee made up of nine representatives from the State Agricultural Experiment Stations, including one representative of Home Economics).

10. QUESTION

How do you avoid politics in committees?

ANSWER

Since most of our funding is so-called "hard money" which is allocated to the State Agricultural Experiment Stations on a formula basis, there is very little opportunity for political interference. Although the USDA is represented in the various planning committees, its representatives do not have the controlling representation.

The four major "farm organizations" support us but seldom do they attempt to utilize political pressure relative to their interactions with us. Each farm organization works quite differently and each has its own political goals. Our job in the State Agricultural Experiment Stations is to produce the new knowledge whereby agriculture, home economics and natural resources can impact on the building of a more efficient and productive agricultural industry, on the development of improved quality of homes and of family life and on the improved utilization, management and conservation of our natural resources.